CLAIM REJECTIONS

REMARKS

Claims 1-26 are pending. Claims 1, 2, 3, 5, 7, 9, 13, 14,15,17, and 19 are

amended herein. Please cancel Claims 21-25 without prejudice.

35 U.S.C. §112 Rejections

Claims 2, 3, 22, and 23 are rejected, under U.S.C. Section 112, as not having

sufficient antecedent basis. Applicant has amended the claims accordingly. Applicant

respectfully submits that the claims of the present invention as recited in currently

amended Claims 2 and 3 have sufficient antecedent basis. Claims 22 and 23 have been

canceled.

35 U.S.C. §102 Rejections

Claims 7, 8, 9, and 10 are rejected under 35 U.S.C. Section 102(e) as being

anticipated by Brandin et al., hereinafter Brandin (US Patent 6,493,813 B1). Applicant

has reviewed the cited reference and respectfully submits that the present invention as

recited in Claims 7, 8, 9, and 10 is not shown or suggested by Brandin.

Examiner is respectfully directed to currently amended independent Claim 7,

which recites that an embodiment of the present invention is directed to a hashing

apparatus, comprising:

a memory which stores a plurality of partial keys used to determine hashing

conflicts;

a hash function block coupled to a memory that applies any polynomial to a full

key and generates a hash value which is used to point to one of the plurality of partial

keys stored in the memory, wherein the partial keys include saved bits comprising a

consecutive, sequential string of bits derived from the original key.

Applicant respectfully submits that the limitations of currently amended

independent Claim 7 are not shown or suggested by Brandin. Specifically, Applicant

respectfully submits that Brandin does not show or suggest "a memory which stores

plurality of partial keys used to determine hashing conflicts;" as is recited in currently

amended independent Claim 7. While the present invention is directed toward storing a

partial key as opposed to storing the entire original key such that attendant memory costs

may be lowered and hashing conflicts can be resolved by consulting the partial key,

Brandin is directed toward dividing the original key into portions, each of which portions

is used for transform such that collisions may be reduced or eliminated (col. 7, lines 14-

38). For example, Brandin cites that a collision is when two different keys have the same

transform (col. 7, lines 10-20) and that though a perfect 64 bit transform may provide a

unique transform, longer keys may produce unresolvable collisions (col. 7, lines 21-24).

Thus, in one example, for 128 bit keys, transforms are formed by forming a first

transform for a first portion of the key, and a second transform is formed for both the first

and second portion of the key. Then the first transform is concatenated with the second

transform to form a first-second combined transform. (col. 7, lines 24-32). To clarify,

while the present invention pertains to storing partial keys to lower memory costs and using the partial keys to resolve hashing conflicts, Brandin pertains to allowing the "transform length to be equal to the maximum key length" when "the maximum key length is greater than the first range for a transform" to "ensure that there is no possibility of a collision". (col. 2, lines and 36-37, 24-25, and 38-39, respectively).

Consequently, the embodiments of the Applicant's invention as is set forth in currently amended independent Claim 7 is neither anticipated nor rendered obvious by Brandin. Claim 8, currently amended Claim 9, and Claim 10 depend from currently amended independent Claim 7 and recite further limitations of the claimed invention. Thus, Claim 8, currently amended Claim 9, and Claim 10 overcome the rejection under 35 U.S.C. 102(e) as being dependent on an allowable base claims.

35 U.S.C. §103 Rejections

Claims 1, 2, 3, 4, 15, 16, 17, and 18 are rejected under 35 U.S.C. Section 103(a) as being unpatentable over Brandin in further view of Biran (US Patent 6,345,347 B1).

Claims 5 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Brandin and Biran in further view of Bryg et al., hereinafter Bryg (US Patent 6,430,670 B1).

Claims 6 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Brandin and Biran in further view of Ji (US PG Publication 2005/008636 A1).

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brandin in further view of Biran and Bryg.

The Examiner is respectfully directed to currently amended independent Claim 1, which recites that a method for hashing comprising:

storing a plurality of partial keys in memory;

applying a hash function to an original key to generate a hash value, wherein said hash function comprises any polynomial;

accessing the memory according to the hash value;

reading a partial key from the memory corresponding to the hash value; and

executing a conflict check by comparing a partial key derived from an incoming full key with the partial key stored in the memory.

Currently amended Claims 2 and 3, and Claim 4 depend from currently amended independent Claim 1. Currently amended independent Claim 15 recites limitations similar to those of independent Claim 1. Claims 16, 17, and 18 depend from currently amended independent Claim 15 and recite further limitations of the claimed invention. Independent Claim 26 recites limitations similar to those of independent Claim 1.

Currently amended independent Claim 1 recites that an embodiment of the present invention is directed to a method for hashing that includes "storing a plurality of partial keys in memory; applying a hash function to an original key to generate a hash value, wherein said hash function comprises any polynomial; accessing the memory according to the hash value; reading a partial key from the memory corresponding to the hash value; and executing a conflict check by comparing a partial key derived from an incoming full key with the partial key stored in the memory."

Applicant respectfully submits that the limitations of currently amended independent Claim 1 are not shown or suggested by Brandin. Specifically, Applicant respectfully submits that Brandin does not show or suggest "storing a plurality of partial keys in memory" as is recited in currently amended independent Claim 1. While the present invention is directed toward storing a partial key as opposed to storing the entire original key such that attendant memory costs may be lowered and hashing conflicts can be resolved by consulting the partial key, Brandin is directed toward dividing the original key into portions, each of which portions is used for transform such that collisions may be reduced or eliminated (col. 7, lines 14-38). For example, Brandin cites that a collision is when two different keys have the same transform (col. 7, lines 10-20) and that though a perfect 64 bit transform may provide a unique transform, longer keys may produce unresolvable collisions (col. 7, lines 21-24). Thus, in one example, for 128 bit keys, transforms are formed by forming a first transform for a first portion of the key, and a second transform is formed for both the first and second portion of the key. Then the first

transform is concatenated with the second transform to form a first-second combined transform. (col. 7, lines 24-32). To clarify, while the present invention pertains to storing partial keys to lower memory costs and using the partial keys to resolve hashing conflicts, Brandin pertains to allowing the "transform length to be equal to the maximum key length" when "the maximum key length is greater than the first range for a transform" to "ensure that there is no possibility of a collision". (col. 2, lines and 36-37, 24-25, and 38-39, respectively).

The Biran reference does not overcome the deficiencies of Brandin disclosed above. The Biran reference does not teach storing a plurality of partial keys in memory, as claimed. In fact, Biran is directed towards how an adapter implements memory protection using a hardware-defined key.

Consequently, the embodiments of the Applicant's invention as is set forth in currently amended independent Claim 1 and currently amended independent Claim 15 are neither anticipated nor rendered obvious by Brandin alone or in combination with Biran. Currently amended Claims 2, 3 and Claim 4 depend from currently amended independent Claim 1 and recites further limitations of the claimed invention. Claim 16, currently amended Claim 17, and Claim 18 depend from currently amended independent Claim 15 and recite further limitations of the claimed invention. Thus, currently amended Claims 2, 3, 17 and Claims 4, 16, and 18 overcome the rejection under 35 U.S.C. 103(a) as being dependent on allowable base claims.

With regards to currently amended Claims 5 and 19, the Bryg reference also does not overcome the deficiencies of Brandin and Biran disclosed above. The Bryg reference does not teach storing a plurality of partial keys in memory, as claimed. In fact, Bryg is directed towards translating virtual addresses utilizing either single address space or multiple address space models in a virtual memory management system. Currently amended Claim 5 depends from currently amended independent Claim 1 and recites further limitations of the claimed invention. Currently amended Claim 19 depends from currently amended independent Claim 15 and recite further limitations of the claimed invention. Consequently, the embodiments of the Applicant's invention as is set forth in currently amended Claims 5 and 19 are neither anticipated nor rendered obvious by the combined teachings of Brandin and Biran in further view of Bryg. Thus, currently amended Claims 5 and 19 overcome the rejection under 35 U.S.C. 103(a) as being dependent on allowable base claims.

With regards to Claims 6 and 20, the Ji reference also does not overcome the deficiencies of Brandin and Biran disclosed above. The Ji reference does not teach storing a plurality of partial keys in memory, as claimed. In fact, Ji is directed towards managing traffic flow through a miltipath network. Claim 6 depends from currently amended independent Claim 1 and recites further limitations of the claimed invention. Claim 20 depends from currently amended independent Claim 15 and recite further limitations of the claimed invention. Consequently, the embodiments of the Applicant's invention as is set forth in currently amended Claim 6 and Claim 20 are neither anticipated nor rendered obvious by the combined teachings of Brandin and Biran in

further view of Ji. Thus, Claims 6 and 20 overcome the rejection under 35 U.S.C. 103(a) as being dependent on allowable base claims.

With regards to Claim 26, as stated above, neither Biran, nor Bryg overcomes the deficiency of Brandin. Neither Biran, nor Bryg teaches storing a plurality of partial keys in memory, as claimed. Consequently, Brandin, alone or in combination with Biran and Bryg, does not anticipate or render obvious the embodiments of the Applicant's invention as disclosed by Claim 26. Therefore, the Applicants respectfully contend that Claim 26 is in condition for allowance.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brandin in further view of Rajski et al., hereinafter Rajski (US PG Publication 2002/0016806 A1). Claims 11 and 12 depend on currently amended Claim 9, which further depends on currently amended independent Claim 7. Currently amended Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brandin in further view of Bryg. Currently amended Claim 13 depends on currently amended independent Claim 7. Currently amended Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brandin in further view of Ji. Currently amended Claim 14 depends on currently amended independent Claim 7.

Examiner is respectfully directed to currently amended independent Claim 7, which recites that an embodiment of the present invention is directed to a hashing apparatus, comprising:

a memory which stores a plurality of partial keys used to determine hashing conflicts;

a hash function block coupled to a memory that applies any polynomial to a full key and generates a hash value which is used to point to one of the plurality of partial keys stored in the memory, wherein the partial keys include saved bits comprising a consecutive, sequential string of bits derived from the original key.

Applicant respectfully submits that the limitations of currently amended independent Claim 7 are not shown or suggested by Brandin. Specifically, Applicant respectfully submits that Brandin does not show or suggest "a memory which stores plurality of partial keys used to determine hashing conflicts;" as is recited in currently amended independent Claim 7. While the present invention is directed toward storing a partial key as opposed to storing the entire original key such that attendant memory costs may be lowered and hashing conflicts can be resolved by consulting the partial key, Brandin is directed toward dividing the original key into portions, each of which portions is used for transform such that collisions may be reduced or eliminated (col. 7, lines 14-38). For example, Brandin cites that a collision is when two different keys have the same transform (col. 7, lines 10-20) and that though a perfect 64 bit transform may provide a unique transform, longer keys may produce unresolvable collisions (col. 7, lines 21-24). Thus, in one example, for 128 bit keys, transforms are formed by forming a first transform for a first portion of the key, and a second transform is formed for both the first and second portion of the key. Then the first transform is concatenated with the second transform to form a first-second combined transform. (col. 7, lines 24-32). To clarify,

while the present invention pertains to storing partial keys to lower memory costs and using the partial keys to resolve hashing conflicts, Brandin pertains to allowing the "transform length to be equal to the maximum key length" when "the maximum key length is greater than the first range for a transform" to "ensure that there is no possibility of a collision" (col. 2, lines and 36-37, 24-25, and 38-39, respectively).

With regards to Claim 11 and 12, the Rajski reference does not overcome the deficiencies of Brandin disclosed above. The Rajski reference does not teach storing a plurality of partial keys in memory, as claimed in currently amended Claim 7. Instead, Rajski is directed towards a method for synthesizing a linear finite state machine.

Consequently, the embodiments of the Applicant's invention as is set forth in Claim 11 and 12 are neither anticipated nor rendered obvious by Brandin alone or in combination with Rajski. Claims 11 and 12 depend from currently amended Claim 9, which further depends on currently amended independent Claim 7 and recites further limitations of the claimed invention. Thus, Claims 11 and 12 overcome the rejection under 35 U.S.C. 103(a) as being dependent on allowable base claims.

With regards to currently amended Claim 13, the Bryg reference does not overcome the deficiencies of Brandin disclosed above. The Bryg reference does not teach storing a plurality of partial keys in memory, as claimed. In fact, Bryg is directed towards translating virtual addresses utilizing either single address space or multiple address space models in a virtual memory management system.

Consequently, the embodiments of the Applicant's invention as is set forth in currently amended Claim 13 is neither anticipated nor rendered obvious by Brandin alone or in combination with Bryg. Currently amended Claim 13 depends from currently amended independent Claim 7 and recites further limitations of the claimed invention. Thus, currently amended Claim 13 overcomes the rejection under 35 U.S.C. 103(a) as being dependent on allowable base claims.

With regards to currently amended Claim 14, the Ji reference does not overcome the deficiencies of Brandin disclosed above. The Ji reference does not teach storing a plurality of partial keys in memory, as claimed. In fact, Ji is directed towards managing traffic flow through a miltipath network.

Consequently, the embodiments of the Applicant's invention as is set forth in currently amended Claim 14 is neither anticipated nor rendered obvious by Brandin alone or in combination with Ji. Currently amended Claim 14 depends from currently amended independent Claim 7 and recites further limitations of the claimed invention. Thus, currently amended Claim 14 overcomes the rejection under 35 U.S.C. 103(a) as being dependent on allowable base claims.

AMENDMENTS TO THE DRAWINGS

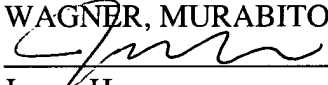The attached sheets of drawings include changes to Figures 2, 3, 4, and 7A.

These sheets, which includes Fig. 2, 3, 4, and 7A, replaces the original sheets including

Fig. 2, 3, 4, and 7a. In Fig. 2, 3, 4, and 7A, previously omitted "prior art" has been

added.

SUMMARY

In view of the foregoing remarks, the Applicant respectfully submits that the

pending claims in the instant patent application are in condition for allowance. The

Applicant respectfully requests reconsideration of the Application and allowance of the

pending claims.

If the Examiner determines the prompt allowance of these claims could be

facilitated by a telephone conference, the Examiner is invited to contact James Hao at the

below listed phone number.

Respectfully submitted,
WAGNER, MURABITO & HAO LLP

Dated: _____2/16_____, 2006

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